

31 October 2018

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Goodman Property Services (Aust) Pty Ltd
Level 17
60 Castlereagh Street
Sydney NSW 2000

Attention: Guy Smith

Dear Guy

Oakdale South Estate MOD 8 Operational Noise Impacts Response to Submissions

Goodman Property Services (Aust) Pty Ltd (Goodman) submitted a Section 4.55(1A) modification (MOD 8) for the Oakdale South Estate (OSE) SSD 6917 to the NSW Department of Planning and Environment (DPE) in August 2018.

The purpose of MOD 8 is to increase the maximum height for a warehouse within Precinct 5 to accommodate rooftop plant, and bring the SSD approval in line with the Development Consent for Precinct 5 (DA18/0510.01) approved by Penrith City Council on 24 July 2018 and amended on 12 September 2018.

DPE received two online submissions to MOD 8 with regards to operational noise impacts from the development:

- SJH Planning and Design on behalf of Pazit Pty Ltd, dated 4 October 2018.
- Allens Linklaters on behalf of Jacfin Pty Ltd, dated 19 October 2018.

1 Submissions and Responses

Goodman has requested that SLR Consulting Australia Pty Ltd (SLR) respond to the submissions where relevant to operational noise and vibration impacts from the OSE. Discussion and responses to these submissions are provided in **Table 1**.

Table 1 Responses to Submissions

Submitted By	Key Acoustic Concerns	SLR Response
SJH Planning & Design (on behalf of Pazit Pty Ltd)	We make the observation that until and unless the specific types and models of plant have been determined, the noise attenuation and/or performance with required standards is unknown and the justification of variation to height limit is not made without the vagaries of the likelihood or otherwise the need for future "... acoustic measures such as ... localised shielding around fixed plant".	The detailed design stage for this project is currently being undertaken and the proposed plant, and specific mitigation measures, are being assessed to achieve compliance with the noise criteria specified in the approved development consent. The assessment includes the specific type, location and relevant operating conditions of each item of plant. The assessment includes the worst case cumulative operations of Oakdale South (both mechanical plant and traffic).
	Concerns now arise as to the effect and impact of multiple roof mounted items of unspecified plant and equipment in terms of both visual affect and aural impact on the rural residential receptors identified as vulnerable generally south in the approved and commenced residential subdivision.	See above response.
	To vary now the overall height control requires the most stringent assessment by the consent authority, a level of assessment unable to be made given the absence of relevant information, specification, model and type of proposed roof mounted plant and whether or not such plant might lead to the need for localised shielding to achieve the necessary level of performance and likely result in yet additional visual degradation.	See above response.
Allens Linklaters (on behalf of Jacfin Pty Ltd)	The Clarification Report does not include any substantive assessment of noise impacts associated with the Modification. Rather, the Clarification Report simply asserts that the current plans for the DHL building show fewer mechanical plant units than were modelled by SLR in the Noise Report and makes an assumption that these will have a similar sound power level to those modelled in the Noise Report, such that noise emissions from mechanical plant would be consistent with or lower than the noise emissions modelled in the Noise Report. This assumption in the Clarification Report is unsound. Wilkinson Murray have identified that the sound power level of 70 dBA for the rooftop plant assumed by SLR is consistent with small domestic style roof condensers and not the large Air Handling Units which are proposed by Goodman in the Modification Application.	The 70 dBA 'limiting SWL' for rooftop plant simply indicates the level above which mechanical plant should be assessed during the detailed design stage in order to confirm their suitability. Where the SWL is higher than 70 dBA, specific mitigation may be required to be investigated during the detailed design stage of the project. The detailed design stage for this project is currently being undertaken and the proposed plant, and specific mitigation measures, are being assessed to achieve compliance with the noise criteria specified in the approved development consent. The assessment includes the specific type, location and relevant operating conditions of each item of plant. The assessment includes the worst case cumulative operations of Oakdale South (both mechanical plant and traffic).

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	In addition, the report by Wilkinson Murray notes that the Noise Report does not consider or factor in additional noise from the following sources: (a) freezer rooms and cool rooms which will require large condensers to be located on the outside of the building; and (b) nine roof exhaust fans.	Plant associated with the freezer and cool rooms are proposed to be located within the plant room on the northern side of the warehouse. Noise sources (both breakout and ventilation requirements) are being assessed as part of the detailed design stage of the project. Rooftop exhaust fans for a temperature controlled facility such as this development are used only in emergency situations. As such, noise emissions from these fans are not considered to be part of typical operations for the facility. These fans have been removed in the current detailed design as the proposed rooftop plant incorporates this function into their design.
	Condition B18 of the SSD Consent imposes a noise limit of 40dB(A) at all 'L3' receivers, including the Jacfin Residential Land. The Noise Report predicts that cumulative noise emissions from the Oakdale South at the Jacfin Residential Land, including the new DHL facility, will be 40 dBA under adverse weather conditions, before factoring in noise from mechanical plant. Accordingly, even before any noise from mechanical plant is considered, the modelling indicates that Goodman will only just comply with the applicable 40 dBA criterion. This is concerning as it means that there is no margin for error in the modelling undertaken by SLR. If even one of the assumptions adopted by SLR in relation to noise levels from truck movements or forklift operations is slightly incorrect, this could result in exceedances of the applicable noise criterion at the Jacfin Residential Land.	The cumulative noise model includes both mechanical plant and vehicles operating simultaneously from all sites within Oakdale South. Predicted noise impacts consider the peak vehicle movements for every warehouse across the whole Oakdale South Estate to be occurring simultaneously during a worst-case 15-minute period, during adverse weather. As such, the modelled noise predictions are considered to be conservative and noise emissions from Oakdale South would typically be lower than the worst-case predicted. Therefore, it is not agreed that there is 'no margin for error' provided in the noise modelling.
	Furthermore, in circumstances where the predicted noise level at the Jacfin Residential Land is already at the limit of 40 dBA before noise from mechanical plant is factored in, the accurate modelling of plant noise and mitigating this noise a level that will not contribute to the overall cumulative noise impacts is crucial. Wilkinson Murray has indicated that mechanical plant noise will need to be limited to 30 dBA at the Jacfin Residential Land in order not to contribute to overall cumulative noise and cause an exceedance of the overall 40 dBA noise limit.	The detailed design stage for this project is currently being undertaken and the proposed plant, and specific mitigation measures, are being assessed to achieve compliance with the noise criteria specified in the approved development consent. The assessment includes the specific type, location and relevant operating conditions of each item of plant. The assessment includes the worst case cumulative operations of Oakdale South (both mechanical plant and traffic).

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	Jacfin submits that given the deficiencies in the modelling undertaken by SLR as noted above, the Modification Application should not be approved unless and until Goodman has demonstrated that the mechanical plant can be designed and operated to not exceed a noise level of 30 dBA at the Jacfin Residential Land. Jacfin further submits that any consent issued should be subject to conditions limiting noise emissions from mechanical plant to 30 dBA at the Jacfin Residential Land and requiring Goodman to undertake an assessment of the actual noise generated by the DHL facility once operational to certify compliance with the 30 dBA limit for mechanical plant and overall 40 dBA limit at the Jacfin Residential Land.	SLR considers that specifying different limits for different noise sources within the Oakdale South Estate is not warranted as the noise criteria specified in the approved development consent applies to the overall noise emissions of Oakdale South, which includes the mechanical plant on each site.
	In previous submissions in relation to the Oakdale South Estate, Jacfin raised the inappropriateness of designing and conditioning a noise wall for a development in circumstances where details of the future built form and uses were unknown. Notwithstanding this, the parameters for the noise wall to be constructed along the southern boundary of the Oakdale South Site and its boundary with the Jacfin Residential Land were set and conditioned in the SSD Consent, ahead of any detailed proposals in relation to the Precinct 5 development being known. Significantly, at the time the noise wall was designed, it was assumed that no buildings at the site, including within Precinct 5, would exceed a height of 15 metres and this was specifically conditioned in Condition B10 of the SSD Consent. Goodman is now seeking to increase this height limit for the building in Precinct 5. Of particular concern, the very structures that are proposed to exceed the height limit previously set in the SSD Consent are in themselves direct sources of noise. Wilkinson Murray has noted that given the elevation of the roof, the perimeter noise barrier required under the SSD Consent is unlikely to provide any useful attenuation of noise emissions from mechanical plant to the Jacfin Residential Land. Accordingly, Jacfin submits that Goodman should be required to demonstrate that other mitigation measures are available and will be implemented to ensure that noise from this mechanical plant proposed to be elevated up to 16.5 metres into the air can be appropriately managed and mitigated.	The model being used to assess the design and mitigation for the project considers the relevant elevation of all plant and equipment, including roof top plant, and the constructed noise barrier. The proposed plant and specific mitigation measures are being assessed to achieve compliance with the noise criteria specified in the approved development consent. The assessment includes the specific type, location and relevant operating conditions of each item of plant.

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Wilkinson Murray (attachment to Allens Linklater submission)	SLR have predicted cumulative noise emissions from Oakdale South at the Jacfin Residential Land, including the new DHL warehouse, to be 40 dBA under adverse weather conditions. This is based on noise from truck movements, forklift operations and light vehicle movements before factoring in noise from mechanical plant. As a result noise from the development's mechanical plant should not result in a noise level above 30 dBA at the Jacfin Residential Land to ensure that the overall 40 dBA noise limit is not exceeded.	The cumulative noise model includes both mechanical plant and vehicles operating simultaneously from all sites within the Oakdale South development.
	In the SLR Noise Report it is stated that <i>"The limiting sound power levels for rooftop fixed plant units was found to be SWL of 70 dBA per unit and should be confirmed during detailed design when the corresponding equipment is selected."</i> The SLR assessment has assumed a maximum of 13 units to be located on the roof of the facility each generating a sound power level of 70 dBA. However this sound power level is consistent with a small domestic type roof condenser which upon review of the roof drawings is not reflective of the large Air Handling Units shown on the roof of the development which are more likely to be 80 – 90 dBA (see attached copy of the roof drawing). The units shown on the roof do not reflect the assumption made by SLR in their assessment. Therefore, in our view, this assumption is inadequate and the actual noise that will be generated by rooftop plant is likely to be higher than modelled and will generate additional noise.	The 70 dBA 'limiting SWL' for rooftop plant simply indicates the level above which mechanical plant should be assessed during the detailed design stage in order to confirm their suitability. The proposed plant and specific mitigation measures are being assessed to ensure compliance with the noise criteria specified in the approved development consent. The assessment includes the specific type, location and relevant operating conditions of each item of plant.
	We also note that on previous applications freezer rooms and cool rooms were shown on drawings and if these are still proposed they will require large condensers to service these areas that have not been factored in the assessment by SLR. These will need to be located on the outside of the DHL building. In addition there is no mention of the nine roof exhaust fans which are shown on the roof drawings and will generate additional noise.	Plant associated with the freezer and cool rooms are proposed to be located within the plant room on the northern side of the warehouse. Noise sources (both breakout and ventilation requirements) are being assessed as part of the detailed design stage of the project.

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	Given the elevation of the roof the perimeter noise barrier is unlikely to provide any useful attenuation of noise emissions from this plant to the Jacfin Residential Land. Given that it is predicted that the cumulative noise from other non-plant operations will just comply with site specific noise criteria any new plant should be acoustically treated to ensure that overall noise levels at the Jacfin Residential Land are acceptable.	The model being used to assess the design and mitigation for the project considers the relevant elevation of all plant and equipment, including roof top plant. The proposed plant and specific mitigation measures are being assessed to ensure compliance with the noise criteria specified in the approved development consent. The assessment includes the specific type, location and relevant operating conditions of each item of plant.
	Therefore it is recommended that any approval of the modification application be subject to a condition requiring that noise from all mechanical plant associated with the DHL facility should be designed so that total mechanical plant noise from DHL should not exceed 30 dBA at the Jacfin Residential Land. Following installation noise measurement should be conducted to certify that compliance has been achieved.	SLR considers that specifying different limits for different noise sources within the Oakdale South Estate is not warranted as the noise criteria specified in the approved development consent applies to the overall noise emissions of Oakdale South, which includes the mechanical plant on each site. Measurement of mechanical plant on Lot 5A is proposed to be conducted after installation, as per the Conditions of Consent for the site.

Yours sincerely



JOSHUA RIDGWAY
Senior Consultant

Checked/
Authorised by: MR